ABSTRACT OF THE DISCLOSURE

A method of enhancing removal of photoresist and/or resist residue from a substrate includes exposing the substrate to an environmentally friendly, non-hazardous co-solvent mixture comprising a carbonate, an oxidizer and an accelerator. The stripping process may be performed under ambient conditions, or in the presence of a supercritical fluid such as supercritical carbon dioxide with the supercritical cleaning step itself being a desirable "green" process. In one embodiment, the co-solvent mixture includes propylene carbonate, benzyl alcohol, hydrogen peroxide and an accelerator such as formic acid. If desired, supercritical carbon dioxide in combination with a second co-solvent mixture may be subsequently applied to the substrate to rinse and dry the substrate. In one embodiment, the second co-solvent mixture includes a lower alkyl alcohol such as isopropyl alcohol.